

Application No.: 10/632,195

Docket No.: JCLA7907-CA

In The Claims:

1. (currently amended) A reading method to a flash memory from a data-access requesting component, wherein the flash memory includes a plurality of storage sectors, and a read operation to one sector of the storage sectors needs a plurality of stages handled by an access controller, the reading method comprising:

performing a first read operation to read a current sector of the storage sectors;~~and~~

starting to perform a second read operation to a next sector of the storage sectors when the first read operation is not completed yet; and

starting to perform a third read operation to read a further next sector of the storage sectors when the first read operation and the second read operation are not completed yet,

wherein the second read operation starts before the first read operation ends thereby decreasing the time required to perform read operations and increasing overall system performance.

Claim 2. (canceled)

3. (original) The reading method of claim 1, wherein the stages includes a first stage for finding a sector of the storage sectors to be read, a second stage for transmitting an information to be read from the flash memory into the access controller, and a third stage for transmitting an information to be read in the access controller into the data-access requesting component.

4. (original) The reading method of claim 1, further comprising recurrently performing the foregoing steps if another sector is still to be read.

Application No.: 10/632,195

Docket No.: JCLA7907-CA

5. (original) The reading method of claim 3, wherein the second stage for the first read operation is overlapping with the first stage for the second read operation.

6. (original) The reading method of claim 3, wherein the third stage for the first read operation is overlapping with the second stage for the second read operation.

7. (original) The reading method of claim 3, further comprising
starting to perform a first stage of a third read operation to find out a further next sector of the storage sectors to be read when the first read operation and the second read operation are not completed yet.

8. (original) The reading method of claim 7, wherein the third stage of the first read operation, the second stage for the second read operation, and the first stage for the third read operation are overlapping.

9. (currently amended) A writing method to a flash memory from a data-access requesting component, wherein the flash memory includes a plurality of storage sectors, and a writing operation to one sector of the storage sectors needs a plurality of stages handled by an access controller, the writing method comprising:

performing a first writing operation to write a current sector of the storage sectors; and
starting to perform a second writing operation to a next sector of the storage sectors when the first writing operation is not completed yet;

wherein the second writing operation starts before the first writing operation ends thereby decreasing the time required to perform writing operations and increasing the overall system performance.

Application No.: 10/632,195

Docket No.: JCLA7907-CA

wherein the stages includes a first stage for transmitting an information to be written into the access controller, a second stage for finding a sector of the storage sectors in the flash memory to be written, and a third stage for transmitting an information in the access controller into the flash memory.

10. (original) The writing method of claim 9, further comprising
starting to perform a third writing operation to write a further next sector of the storage sectors when the second writing operation is not completed yet.

Claim 11. (canceled)

12. (original) The writing method of claim 9, further comprising recurrently performing the foregoing steps if another sector is still to be written.

13. (currently amended) The writing method of claim ~~[[11]]~~12, wherein the third stage for the first writing operation is overlapping with the first stage of the second writing operation.

14. (currently amended) The writing method of claim ~~[[11]]~~12, wherein the first stage and the second stage for the same writing operation are overlapping.

15. (currently amended) The writing method of claim ~~[[11]]~~12, wherein the third stage of the first writing operation, the first stage for the second writing operation, and the second stage for the second writing operation are overlapping.

Claims 16-22. (canceled)

Application No.: 10/632,195

Docket No.: JCLA7907-CA

23. (new) A reading method to a flash memory from a data-access requesting component, wherein the flash memory includes a plurality of storage sectors, and a read operation to one sector of the storage sectors needs a plurality of stages handled by an access controller, the reading method comprising:

performing a first read operation to read a current sector of the storage sectors;

starting to perform a second read operation to a next sector of the storage sectors when the first read operation is not completed yet,

wherein the stages includes a first stage for finding a sector of the storage sectors to be read, a second stage for transmitting an information to be read from the flash memory into the access controller, and a third stage for transmitting an information to be read in the access controller into the data-access requesting component,

wherein the second stage for the first read operation is overlapping with the first stage for the second read operation, whereby the second read operation starts before the first read operation ends thereby decreasing the time required to perform read operations and increasing overall system performance.